ABSTRACTS

THE NORTHROP FLYING WING

The Northrop Flying Wing is an experimental plane, designed by John K. Northrop and W. R. Jay. It is not in production yet, and will not be until further exhaustive tests have been made.

The plane has no fuselage. The two cockpits, the motor and the fuel tanks are in the wing. The tail surfaces are supported by two steel booms. The landing gear consists of three wheels, two near the front of the wing and one under the trailing edge, and eliminates the use of a tail skid. The plane is entirely metal clad and is powered with a Mark III English Cirrus Engine. The propeller is of the pusher type. It flies and handles well and gives promise of being worth putting into production.

—*Aeronautics*, April '30.

ADVANTAGES OF WOOD TANKS AND VATS

Among the qualities of wood which make it especially desirable for many industrial uses are acid resistance and low heat conductivity. Wood tanks and vats are used in more than 175 distinct industries in capacities ranging from supply containers to pickling vats for steel. In bleaching, it is largely a question of the kind of wood and not whether wood will be used, because chlorine or almost any bleaching agent readily attacks most metals and produces a discoloration.

The storing of liquids or gases that are of an explosive nature in wood containers is an important factor as wood does not give off sparks when hit.

In several branches of the transportation industry wooden tanks have proved to be very economical and efficient in handling certain classes of liquids.

DIESEL DEVELOPMENTS ABROAD

The advantages of Diesel engines for aircraft use have been known for a long time but only recently have any of the experimental engines proven successful. Their weight has heretofore made their use impracticable.

The German Junkers Company has produced an engine with six vertical, water-cooled cylinders, each cylinder containing two pistons, operating on the two stroke principle and driving two crankshafts. Special gearing is used to interlock these two shafts and greatly increase the propeller drive efficiency.

The engine normally has an output of 600 h.p. and develops a maximum of 700 h.p. at 1120 r.p.m. Its dry weight is 1320 pounds, but the Junkers engineers hope to make this figure considerably lower in the near future.

In Great Britain the Beardmore "Tornado" Diesel engine has attracted attention through its use in the R-101, England's new airship. It has eight cylinders in line and develops 650 h.p. at 1000 r.p.m. This engine, however, is too heavy for use in airplanes.—*Airway Age.*

One of the first all-welded bridges in Europe spans the Sludeiva River, near Posen. It is 89 feet long and weigh 55 tons. It is sttaed that a riveted span would have weighed approximately 70 tons.—*Engineering and Contracting.*

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Probably the best example of modern cable making is found in the construction of the supports for the new Hudson River bridge in New York City. The cables are three feet thick and are made up of bundles of straight wire $\frac{3}{16}$-inch in diameter. They are capable of sustaining a dead load of approximately 350,000 tons, which, roughly, is the weight of six ships of the size of the Leviathan.—*Gas-Age Record.*

About the only people in the world who are not benefited greatly from the use of the telegraph are the Chinese. The reason is that theirs is a picture language which cannot be adapted to the Morse code. In order to overcome this the Radio Corporation of America offers a proposal of transmitting messages to and from China by a system of telephotography, much the same as used by newspapers and banks in telegraphing pictures and signatures by wire.—*Gas-Age Record.*

All dredging and power equipment for the Placer Development properties in New Guinea will be transported by airplane, thus saving $625,000 and a year in time. The heaviest freight load will be 7,000 pounds.—*Engineering and Mining Journal.*

McMURRAY TAR SANDS

An experimental plant for the mechanical separation of oil, gasoline, and asphalt from the McMurray tar sands is now going up on the outskirts of Edmonton, Alberta. This plant will treat 150 tons daily, and is but the initial step in an industry that promises to be of big proportions. The deposits are known to contain an enormous supply of oil—enough, it is said, to satisfy the world demand for several years.—*Compressed Air.*

The Independent Men's Council, an organization of non-fraternity students, decided at a recent meeting to investigate the method of appointing representatives to the Student Senate from the colleges of Agriculture and Engineering.

They claim that the method of selecting these representatives is undemocratic, the men being appointed by the All-Ag Council and the Engineer's Council respectively.

The froth flotation process, which is used extensively in the concentration of ores, is being applied with success to the work of separating coal from ash-forming materials. The agitation of raw coal, one-tenth of an inch or finer in size, is done with four to ten times its weight of water and with a small quantity of reagent, 0.5 to 5 pounds, per ton of dry coal. The reagent in combination with the agitating air, produces a froth that supports the coal, while the heavier ash forming materials remain in the bulk of the water.—*Compressed Air.*

Germany is using steel railroad ties in place of the present wooden type. The ties weigh 172 pounds and have proven to be very satisfactory. Other countries using steel ties to a limited extent are Austria, France, Czechoslovakia, and Great Britain.—*Iron Age.*